

# Wafergard® III NF-750 In-line Gas Filters

*Installation and use manual*



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## INTRODUCTION

Wafergard® III NF-750 nickel filters are the cleanest, most efficient all-metal filters available. The nickel filter membrane offers superior corrosion resistance and excellent compatibility with inert and reactive gases.

The innovative housing design eliminates outgassing and reduces drydown time. The Wafergard III NF-750 gas filter provides the strength of Entegris' metal membrane with the pressure drop and compact size of PTFE fluoropolymer filters.

## FEATURES & BENEFITS

- Cleanest, most efficient all-metal filter available
- Superior particulate filtration for ultrapure applications

## APPLICATIONS

- Ultrapure gas lines
- High-temperature applications
- Upgrade of existing PTFE fluoropolymer filters
- Valve manifold boxes
- New fab construction
- Spin rinse dryers
- Inert and reactive gases\*
- Bulk gas
- Vapor phase gas

\* Not recommended for use with CO, O<sub>3</sub>, and low-level hydride dopant gases

## SPECIFICATIONS

<b>Materials</b>	Filter element	Sintered nickel membrane filter	
	Housing	Electropolished VAR 316L stainless steel housing	
<b>Downstream cleanliness</b>	Particles <sup>1,2</sup>	<0.03 particles/liter (<1 particle/ft <sup>3</sup> ) >0.01 µm @ 300 slpm	
	Volatiles <sup>3</sup>	Volatile outgassing of H <sub>2</sub> O, O <sub>2</sub> , and THC is below detectable limits (by RGA and FID at room temperature)	
<b>Removal rating</b>	≥0.0015 µm		
<b>Surface finish interior</b>	≤5 µin Ra		
<b>Total flow area</b>	140.0 cm <sup>2</sup>		
<b>Helium leak rating</b>	Qualified	2 × 10 <sup>-10</sup> atm-cc/sec	
	Tested	1 × 10 <sup>-9</sup> atm-cc/sec	
<b>Operating conditions</b>	Maximum inlet pressure	52 bar (750 psig) @ 100°C (212°F)	
	Maximum forward/reverse differential pressure	7 bar (100 psid)	
	Maximum operating temperature	Inert gases	400°C (752°F) @ 27.5 bar (400 psig)
		Corrosive and reactive gases	50°C (122°F) @ 52 bar (750 psig)
<b>Warranty</b>	5 year		
<b>Particle retention</b>	Greater than 99.9999999% (9 LRV) removal of all particles at 300 slpm; greater than 99.9999% (6 LRV) removal of all particles at 750 slpm (referenced at the most penetrating particle size)		
<b>Flow rating</b>	See performance data		

<sup>1</sup> Particle cleanliness qualified following SEMASPEC Test Method for Particle Shedding (#93021511A-STD).

<sup>2</sup> Verified at 100 slpm for ¼" gasket seal fitting (compatible with VCR fitting).

<sup>3</sup> Volatile cleanliness qualified following SEMASPEC Test Methods for: THC Contribution (#90120396B-STD), Moisture Contribution (#90120397B-STD), Oxygen Contribution (#90120398B-STD).

## INSTALLATION AND USE

### STEP 1: UNPACK THE FILTER

The filter is double-bagged for cleanroom service and should remain packaged until installation.

**NOTE: Do not remove the filter from the protective bag unless you are in a clean environment.**

1. Remove the filter from the box and carry it into the gray area.
2. Remove the outer protective bag and discard.
3. Carry the filter (sealed in the inner bag), into the clean area.

### STEP 2: INSTALL THE FILTER

1. Prepare the connection fitting in place on the gas line. Any other fitting components, such as stainless steel gaskets, should be blown clean with a filtered gas before use.
2. Maintain a flow of at least 1 slpm (0.05 SCFM) of inert gas during installation to minimize tubing and filter contamination from environmental moisture and particles. The recommended purge gas is electronic-grade nitrogen.
3. Open the inner bag and remove the filter. Remove the fitting protection caps and seat the filter on the mating connections.
4. Tighten the nuts by hand, then 1/8-turn past hand-tight by wrench for VCR-compatible fittings. **DO NOT overtighten.**


**NOTE: Refer to specific technical guides furnished by fitting manufacturers for additional specifications.**

### STEP 3: PREPARE THE FILTER FOR USE

1. Verify integrity of the seal by appropriate helium leak-testing procedures.
2. Turn the gas flow ON, then OFF, 10 times to remove any particles generated during installation. (The flow rate used should at least equal the process flow specifications.)
3. Installation is complete. Initiate startup procedures for process gases.

## FILTER REPLACEMENT

1. Turn off the process gas.

 **CAUTION! Purge the system with inert gas for a minimum of 4 hours at full gas flow when using toxic, corrosive, or pyrophoric gases.**

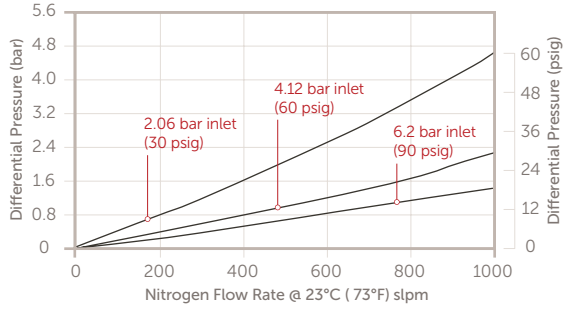
2. Remove the existing filter from the gas line and seal with fitting caps.

3. Install a replacement filter as outlined above.

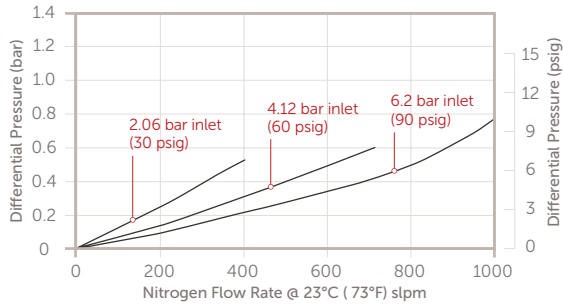
 **CAUTION! Dispose of the used filter in compliance with local regulations.**

## PERFORMANCE DATA

1/4" Fitting connection

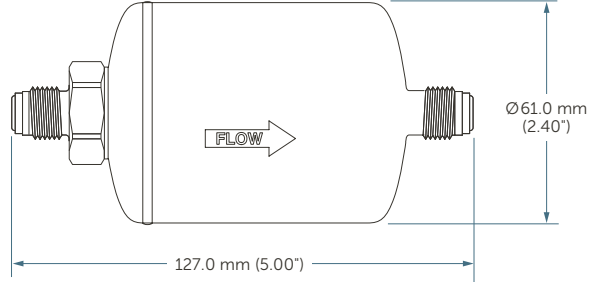


1/2" Fitting connection

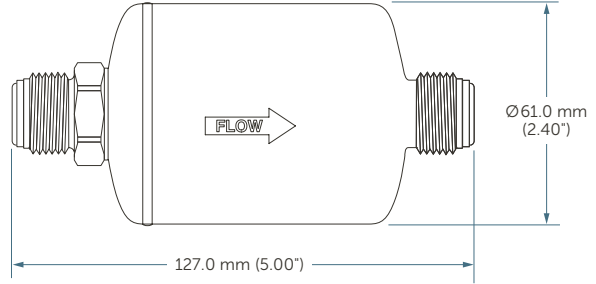


## DIMENSIONS

1/4" Fitting connection



1/2" Fitting connection



## ORDERING INFORMATION

Part number	Overall length	Connection
WG3NS7RR2	127 mm (5.00")	1/4" Gasket seal (compatible with VCR fitting) male inlet/outlet
WG3NS7RR4	127 mm (5.00")	1/2" Gasket seal (compatible with VCR fitting) male inlet/outlet

#### LIMITED WARRANTY

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